IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

MICHAEL SHU-HUAN WANG ET AL.

Serial No. 10/718,921 (TI-34402)

Filed November 21, 2003

For: CHEMICAL-MECHANICAL POLISHING APPARATUS AND METHOD TO MINIMIZE SLURRY ACCUMULATION AND SCRATCH EXCURSIONS

Art Unit 2399

Examiner SHANTESE L. McDONALD

Customer No. 23494

Mail Stop Amendment
Commissioner for Patents
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CERTIFICATE OF MAILING OR TRANSMISSION UNDER 37 CFR 1.8

I hereby certify that the attached document is being deposited with the United States Postal Service with sufficient postage for First Class Mail in an envelope addressed to Director of the United States Patent and Trademark Office, P.O. Box 1450,, Alexandria, VA 22313-1450 or is being facsimile transmitted on the date indicated below:

7-29-06

Jay M. Cantor, Reg. No. 19,906

DECLARATION OF JAY M. CANTOR

Jay M. Cantor declares as follows:

That he is an attorney of record in the subject application.

That he has reviewed the attached Patent Disclosure Form.

That, on information and belief, the attached Patent Disclosure Form was submitted to the Patent Department of Texas Instruments Incorporated prior to September 3, 2003 and signed by applicants and witnessed prior to September 3, 2003.

That, on information and belief, the attached Patent Disclosure Form sets forth the invention as claimed in the subject application in a condition ready for patenting in

accordance with the decision of the United States Supreme Court in Pfaff v. Wells, 525 U.S. 55 (U.S. 1998).

I declare under penalty of perjury the the foregoing is true and correct on information and belief.

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PATENT DISCLOSURE FORM

34408

DOCKET NO. TI-(to be filled in by Patent Activity)

IF ELECTRONICALLY TRANSMITTED, PROCESSING OF YOUR DISCLOSURE CANNOT BE COMPLETED WITHOUT A FOLLOW-UP COPY SIGNED AND DATED BY ALL INVENTORS AND AT LEAST ONE WITNESS.

1. Please suggest a descriptive title for your invention:

   CMP scratch reduction method by eliminating conglomerated slurry on polish pad using in-situ extended spray nozzle method.

2. This invention supports strategy: (check 1 or more)

☐	DLP	DSPS	
☐	Materials	☐	Wireless
☒	Fab/Processes	☐	Video
☐	Assembly/Test/Packaging	☐	Set Top
☐	Other	☐	Application Specific
		☐	Remote/Access/Networking
		☐	Emerging Markets
		☐	Mixed Signal & Logic
		☐	Mass Storage
		☐	Other

3. What is the problem solved by your invention?

   CMP wafer scratches due to conglomerated slurry accumulating in the center of polish pad.

4. What is your solution to the problem?

   Utilize extension of spray nozzles design, strategically positioned to eliminate slurry build up.

5. When was your solution first conceptually or mentally complete?

   Date:

6. What is the first tangible evidence of such completion?

Date: [illegible] - initial concept implemented on 1 polisher

7. What is different about your solution, compared with other solutions to the same problem?

No other solution implemented. This is would be first.

8. What are the advantages of your solution?

Reduces CMP scratches with minor in-fab modification. No interference with other hardware in process area.

9. What TI products, processes, projects or operations currently implement your invention?

Impact C035 products in kfab and fanout to other fabs.

10. What is the date of the first implementation?

Date: :

11. What record exists to prove this date?

photo of hardware on equipment

12. Is there any future implementation planned?

Yes ☒ No ☐

If so, please furnish the TI PART No. or project name

Extended nozzle on PMD CMP for defect reduction.

13. Has the invention been published or disclosed to anyone outside of TI?

Yes ☐ No ☒

When?

If planned - when? (Catalog, advertising, data book, application note, conference paper, magazine article, TI TJ, proposal document.)

Was there a nondisclosure agreement (NDA)?

Yes ☐ No ☐

14. Has a TI product incorporating the invention been publicly introduced, quoted, sampled or shipped?

Yes ☐ No ☒

When? If planned—when?

15. Was the invention conceived or first implemented in the performance of a government contract or subcontract?

Yes ☐ No ☒

Contract #:

THE INVENTION DESCRIBED BY THIS DISCLOSURE IS SUBMITTED PURSUANT TO MY EMPLOYMENT AGREEMENT WITH TEXAS INSTRUMENTS INCORPORATED OR A TI SUBSIDIARY (SPECIFY):

Has this disclosure been previously sent to the Patent Department electronically (unsigned)?

Yes ☐ No ☒

PLEASE PRINT ALL INVENTOR INFORMATION.

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Country of Citizenship:

Inventor 4's Signature: _____

Date:

Mail Station:

◆ ◆

This invention disclosure with any attachments was read and understood by me on

_____ _____

Witness 1: Date

This invention disclosure with any attachments was read and understood by me on

_____ _____

Witness 2: Date

- .B - different Substrate.
- Co35.1 Compared to baseline.
  .A

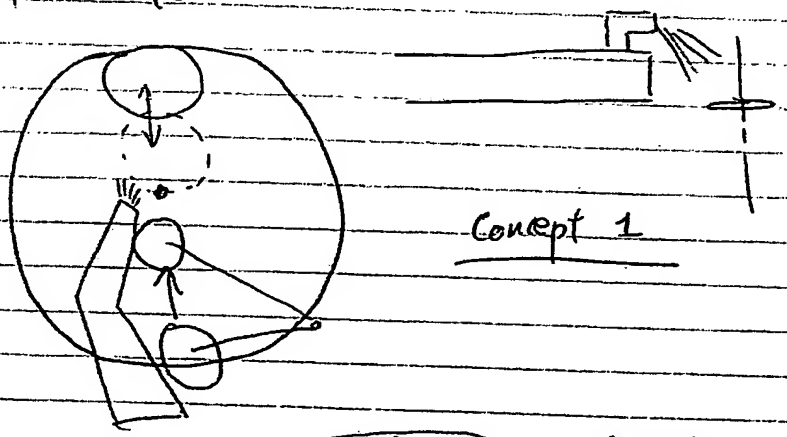
- Adjust Intensity of Laser strike by 8% to attain base line slag. → wed.

- Bottom Notch Not YC measured.

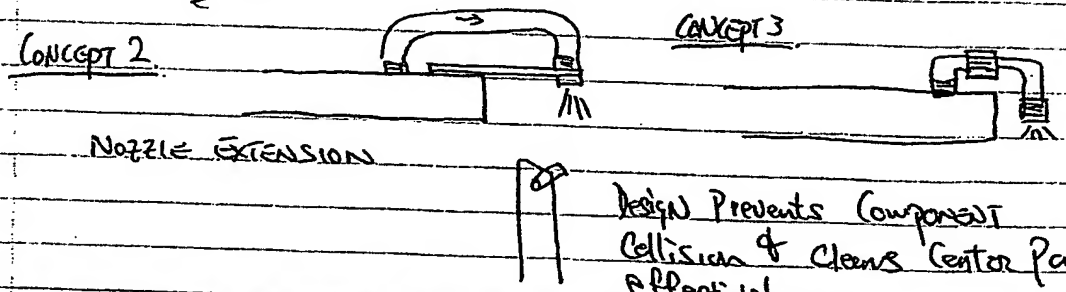
CP15X Software w/PM

- Filter
- Groove / No groove
- Still Loop vs. Bucket
- Klebsch Hi vs Low psi
- PMD - current vs Non current

CP15M - pm 2nd Concept
CP25 - pc's.



Concept 1



CONCEPT 2

CONCEPT 3

NOZZLE EXTENSION

Design Prevents Component Collision & Cleans Center Pad effectively.